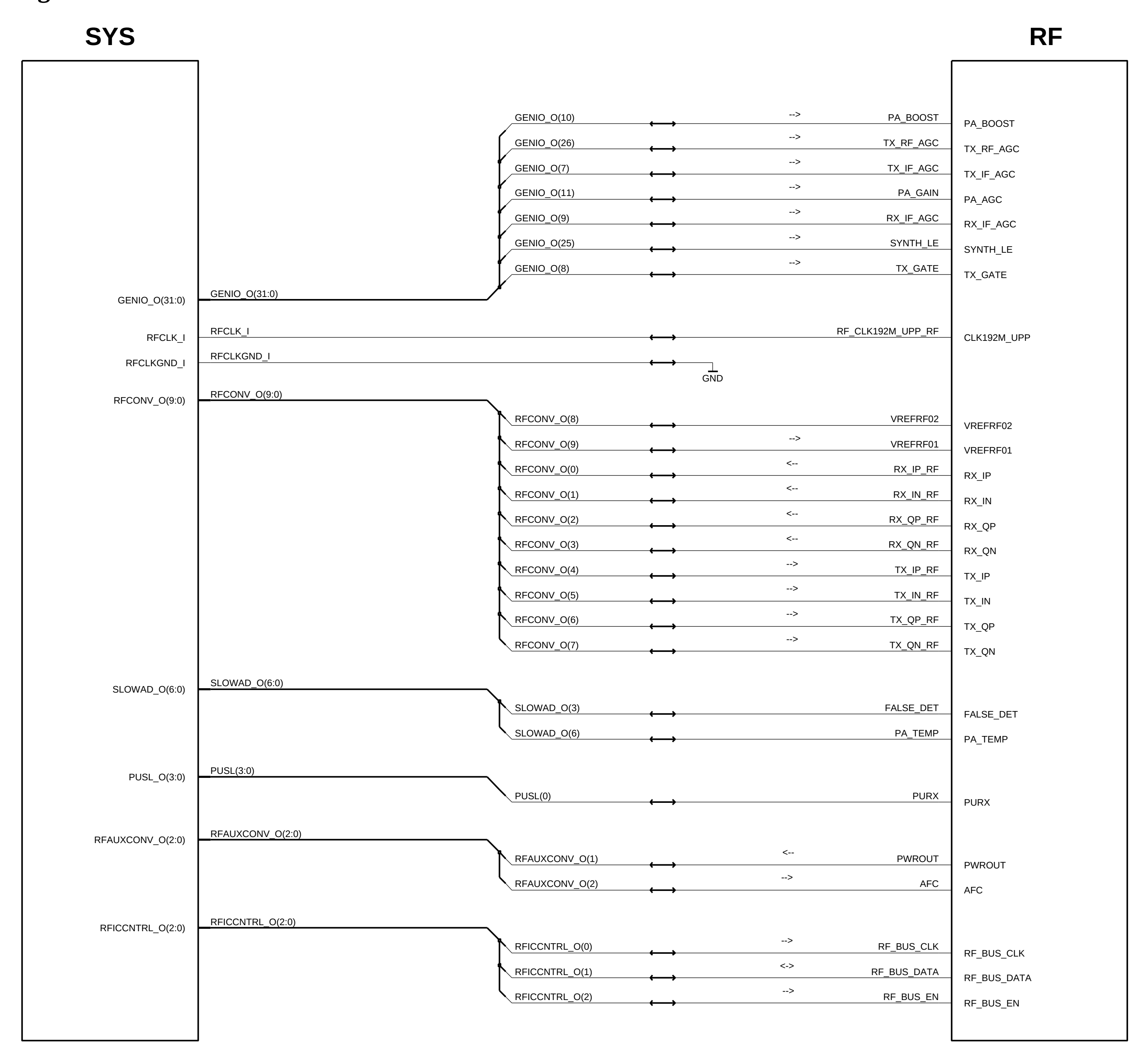
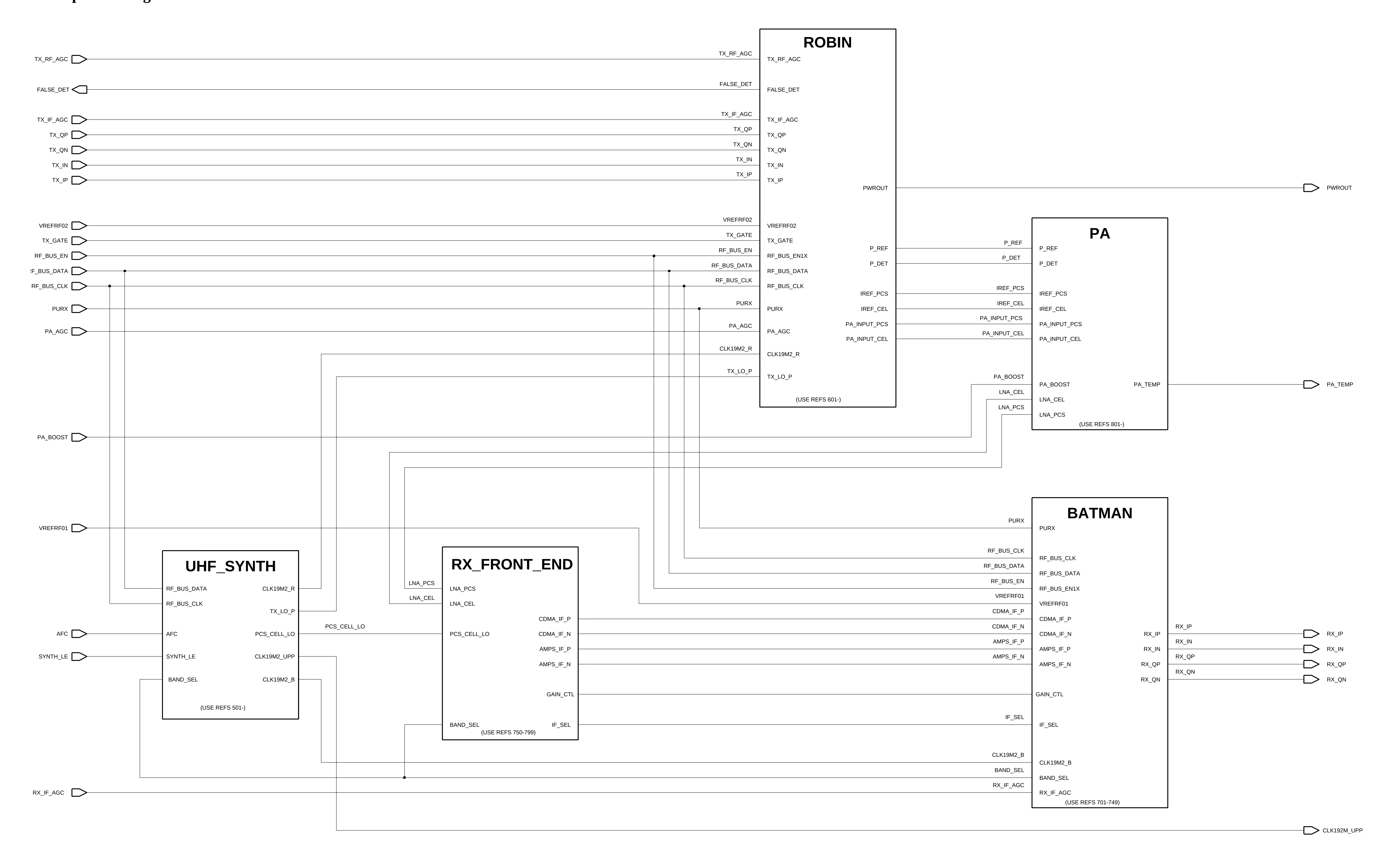
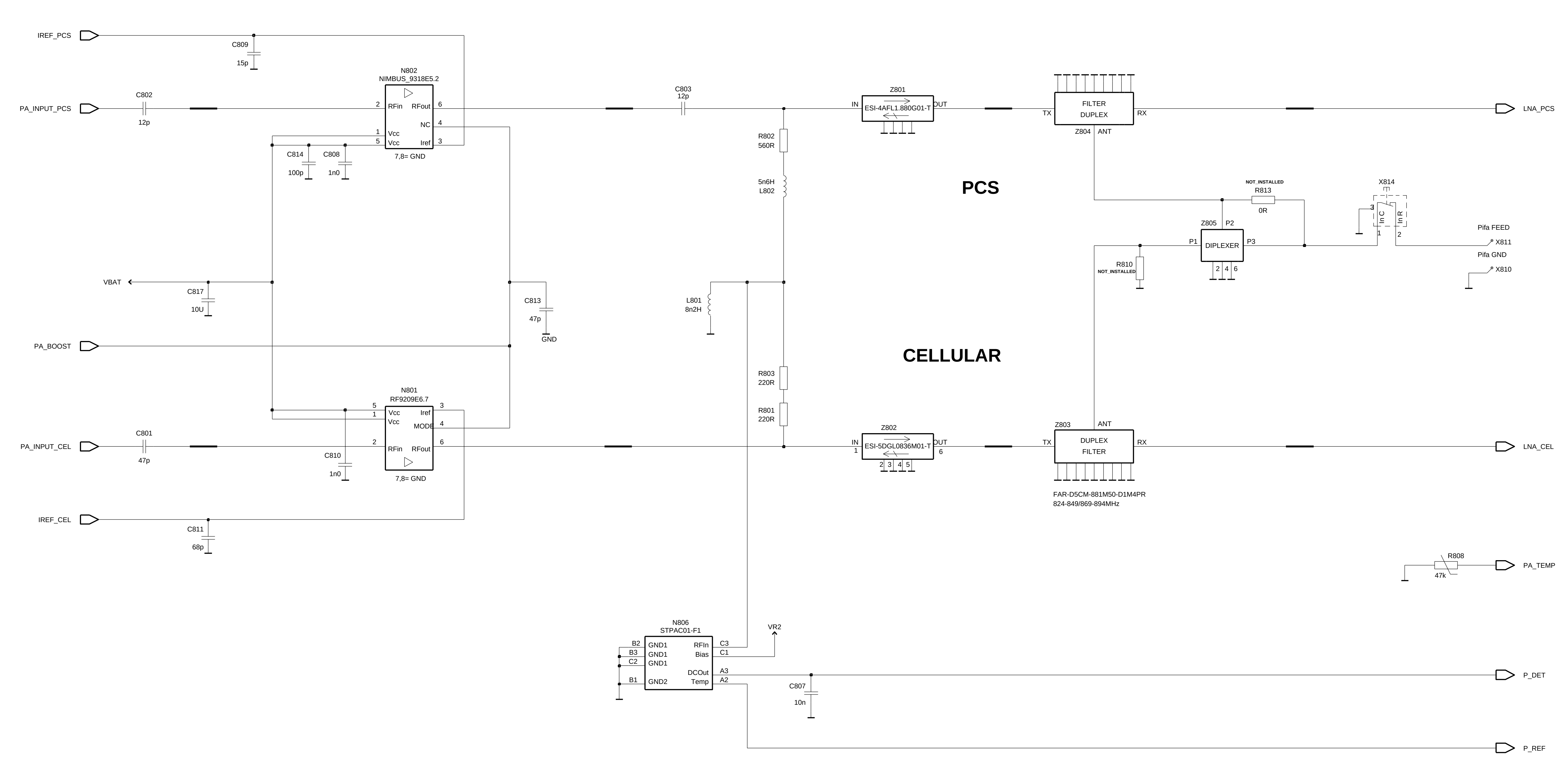
Top-level Diagram



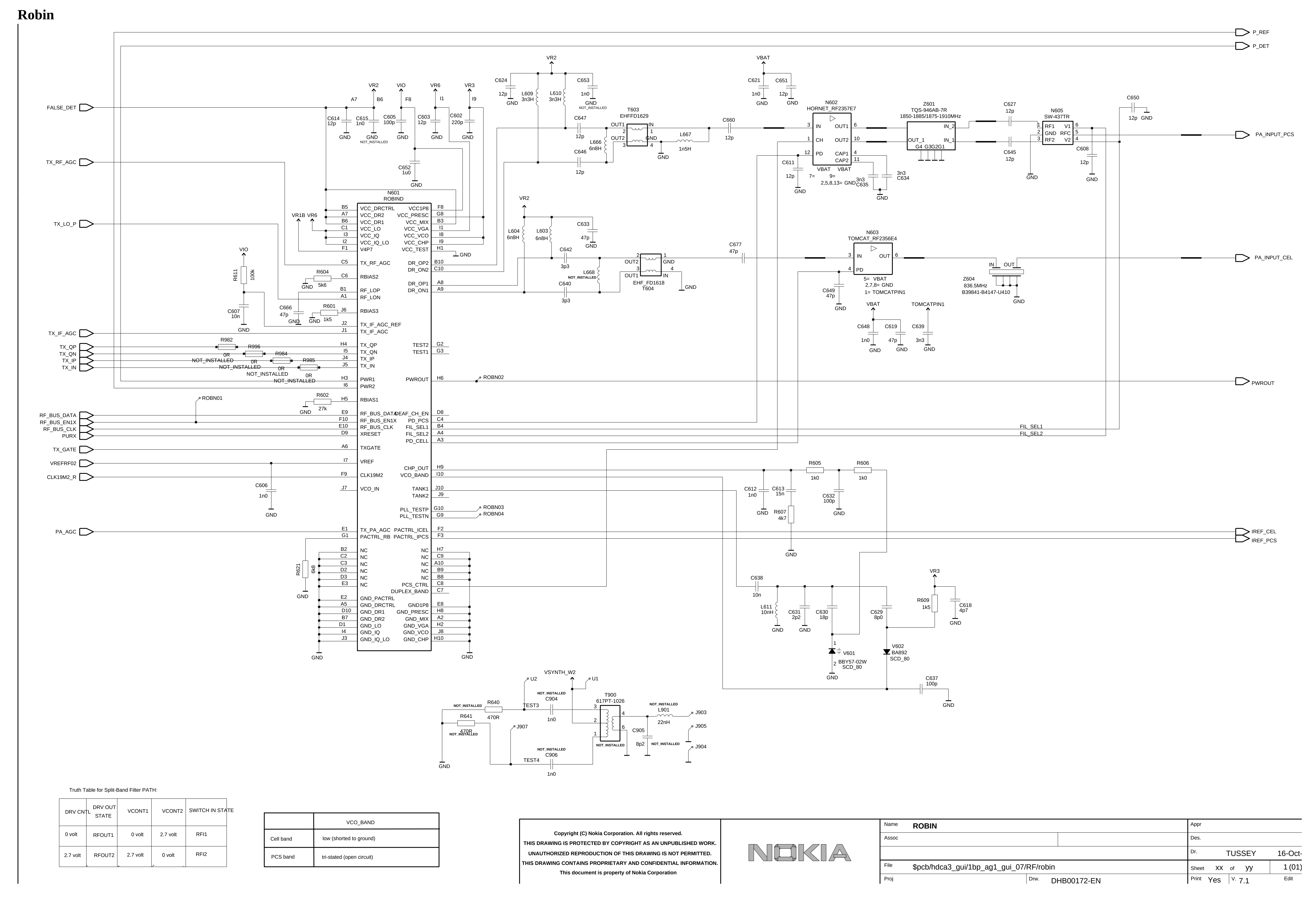
RF Top-level Diagram



PA


IREF_PCS
C809
15p
N802
NIMBUS_9318E5.2
PA_INPUT_PCS
C802
12p
RFin
RFout
NC
Vcc
Vcc
Iref
7,8= GND
C814
100p
C808
1n0
C803
12p
Z801
ESI-4AFL1.880G01-T
IN
OUT
FILTER
DUPLEX
TX
RX
Z804
ANT
LNA_PCS
R802
560R
5n6H
L802
PCS
NOT_INSTALLED
R813
0R
X814
Z805
P2
P1
DIPLEXER
P3
R810
NOT_INSTALLED
Pifa FEED
X811
Pifa GND
X810
VBAT
C817
10U
C813
47p
GND
L801
8n2H
PA_BOOST
CELLULAR
R803
220R
R801
220R
N801
RF9209E6.7
Vcc
Vcc
Iref
MODE
RFin
RFout
7,8= GND
PA_INPUT_CEL
C801
47p
C810
1n0
Z802
ESI-5DGL0836M01-T
Z803
ANT
DUPLEX
FILTER
LNA_CEL
FAR-D5CM-881M50-D1M4PR
824-849/869-894MHz
IREF_CEL
C811
68p
R808
47k
PA_TEMP
N806
STPAC01-F1
GND1
GND1
GND1
GND2
RFin
Bias
DCOut
Temp
VR2
C807
10n
P_DET
P_REF

Robin



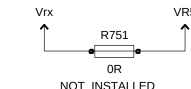
DRV CNTL	DRV OUT STATE	VCONT1	VCONT2	SWITCH IN STATE
0 volt	RFOUT1	0 volt	2.7 volt	RFI1
2.7 volt	RFOUT2	2.7 volt	0 volt	RFI2

	VCO_BAND
Cell band	low (shorted to ground)
PCS band	tri-stated (open circuit)

NOKIA

Name ROBIN
Assoc
File $pcb/hdca3_gui/1bp_ag1_gui_07/RF/robin
Proj
Drw. DHB00172-EN
Appr
Des.
Dr. TUSSEY 16-Oct-
Sheet xx of yy 1 (01)
Print Yes V. 7.1 Edit

Front End



LNA_PCS
L751
6n2H
C752
NOT_INSTALLED
LNA_CEL
L750
19n0H
C751
NOT_INSTALLED
IF_SEL
R765
47k
C750
100p
PCS_CELL_LO
L771
2n7H
BAND_SEL
R768
47k
C756
100p
GAIN_CTL
R764
47k
C753
100p
GND

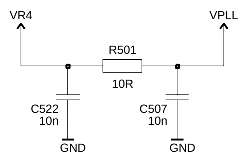
L702
12nH
N750
ALFRED_CMH0819N
4 P_MIX_IN
16 C_MIX_IN
10 P_LNA_IN
11 C_LNA_IN
3 BAND
7 GAIN_CTL
18 IFA_IN
19 IFA_SRC
23 IF_SEL
24 LO_IN
AMPS_OUT 20
MIX_OUT 17
P_LNA_OUT 8
C_LNA_OUT 13
CDMA_OUT 22
LO_VDD_C 2
LO_VDD_P 1
P_RFA_VDD 5
VDD 14
RFA_VDD_C 15
GND 6
GND 9
GND 12
L770
82nH

Vrx
C757
56p
L752
15nH
C755
1p5
R769
4R3
C763
12p
L773
2n7H
C788
100n
Z751
881.5MHZ
IN OUT
Z750
1p5
C785
1960MHZ
L753
220nH
C766
100p
C759
4p7
R707
82R
L755
18nH
C769
3n3
C740
22p
L757
15nH
R750
4R3
C758
47n
C787
12p

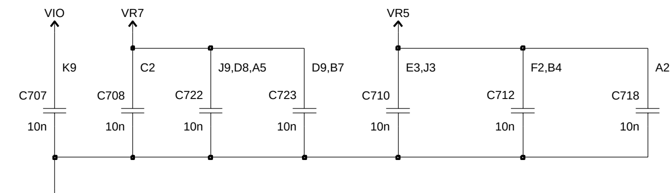
1n0
C784
L764
180nH
L765
120nH
L762
82nH
C783
4p7
C781
3p9
Z752
128VT30A
128.1MHz
C777
10p
L766
120nH
C778
6p8
L767
220nH
C779
6p8
L768
220nH
AMPS_IF_P
AMPS_IF_N
C786
100n
C761
3n3
L754
100nH
C782
2p2
NOT_INSTALLED
C767
470p
B39131-B4957-H710
Z753
128.1MHz
In
/In_Gnd Bal_Out
Bal_Out
Case_Gnd GND
L759
100nH
C770
1p2
C771
6p8
L760
120nH
L761
120nH
C772
6p8
CDMA_IF_P
CDMA_IF_N

	LOGIC INPUTS		
MODES	BAND	GAIN_CTL	IF_SEL
CEL CDMA Hi Gain	0	1	0
CEL CDMA Lo Gain	0	0	0
PCS CDMA Hi Gain	1	1	0
PCS CDMA Lo Gain	1	0	0
AMPS Hi Gain	0	1	1
AMPS Lo Gain	0	0	1

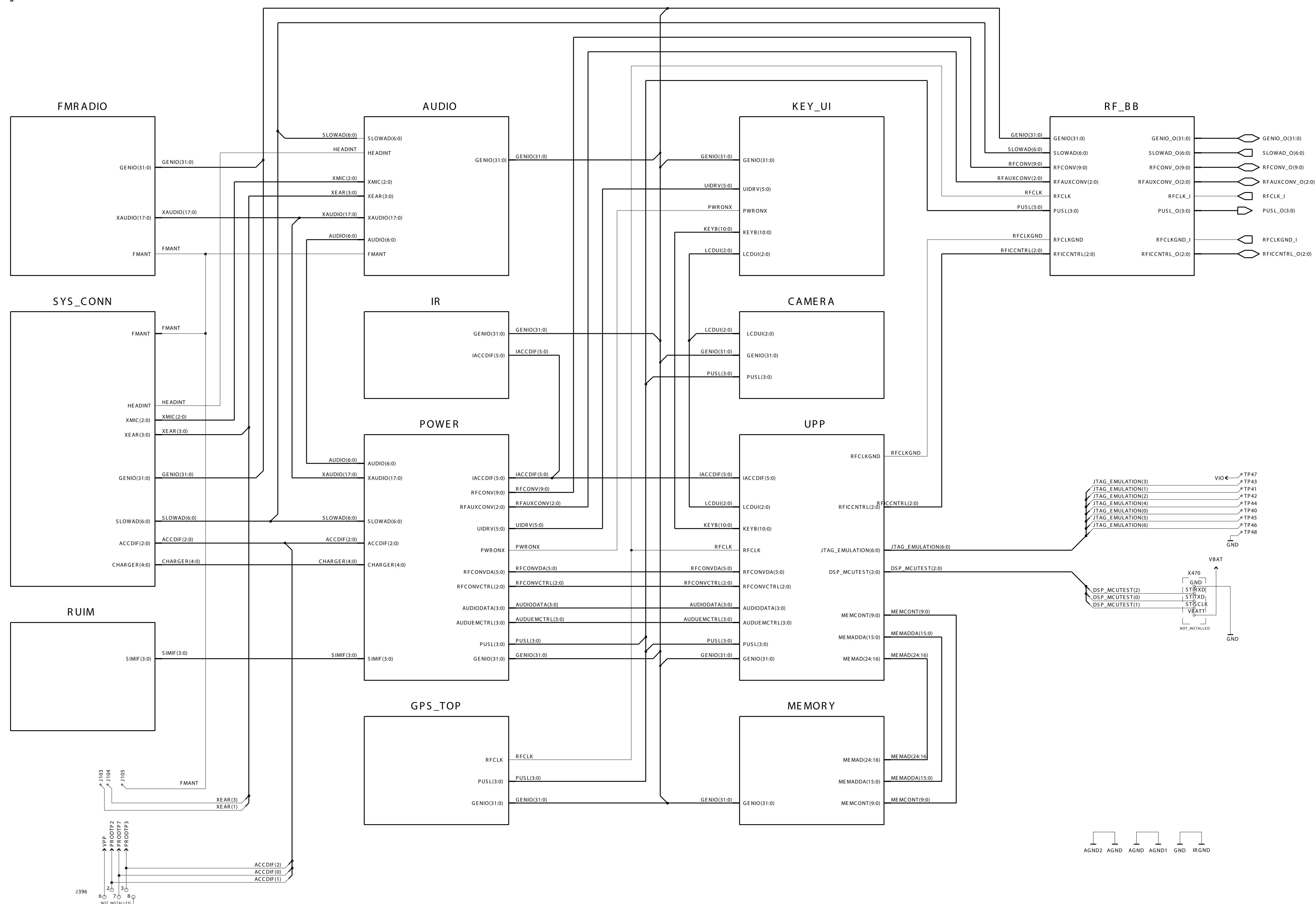
UHF Synthesizer



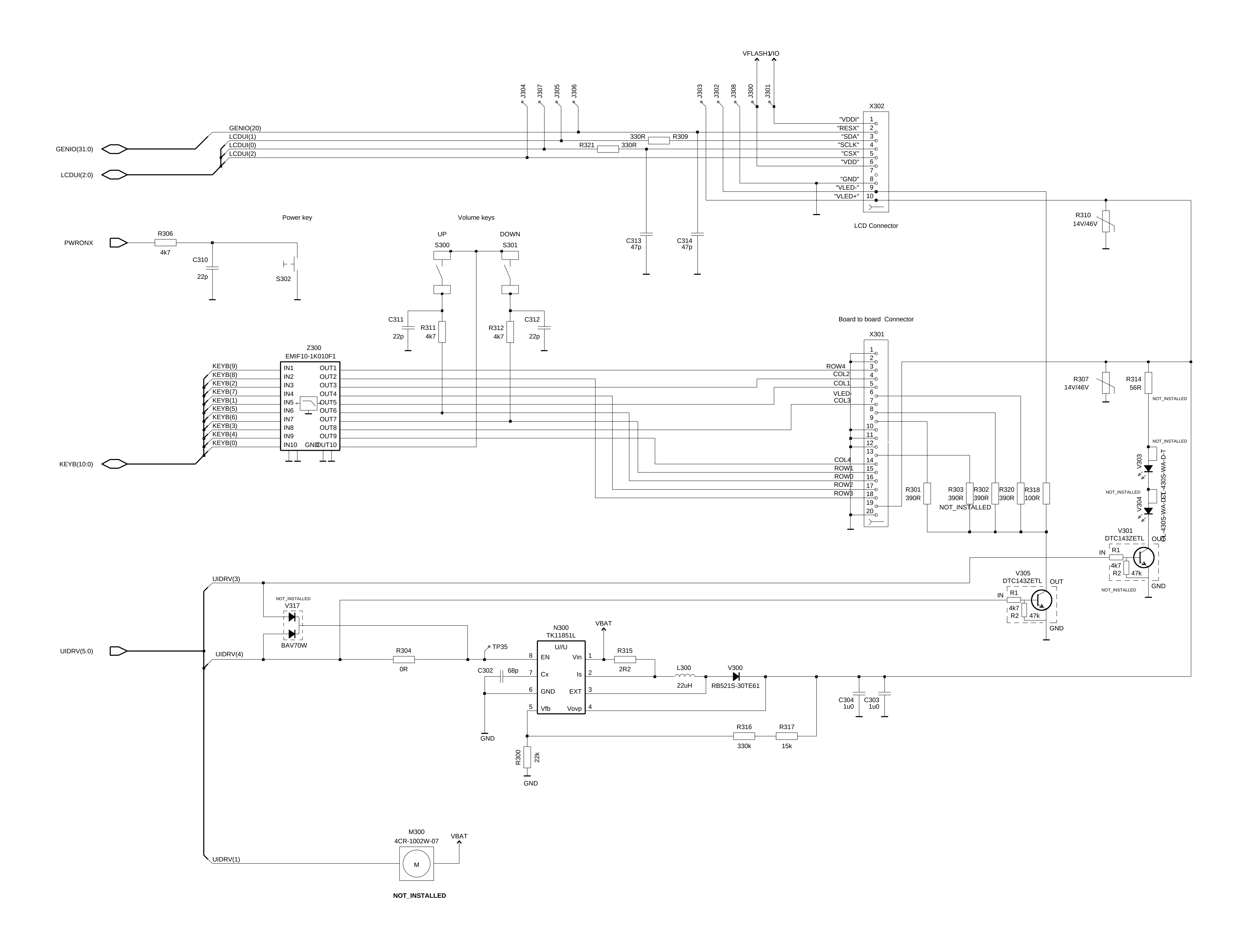
Batman


VIO
VR7
VR5
K9
C2
J9,D8,A5
D9,B7
E3,J3
F2,B4
A2,C3
C707
C708
C722
C723
C710
C712
C718
10n

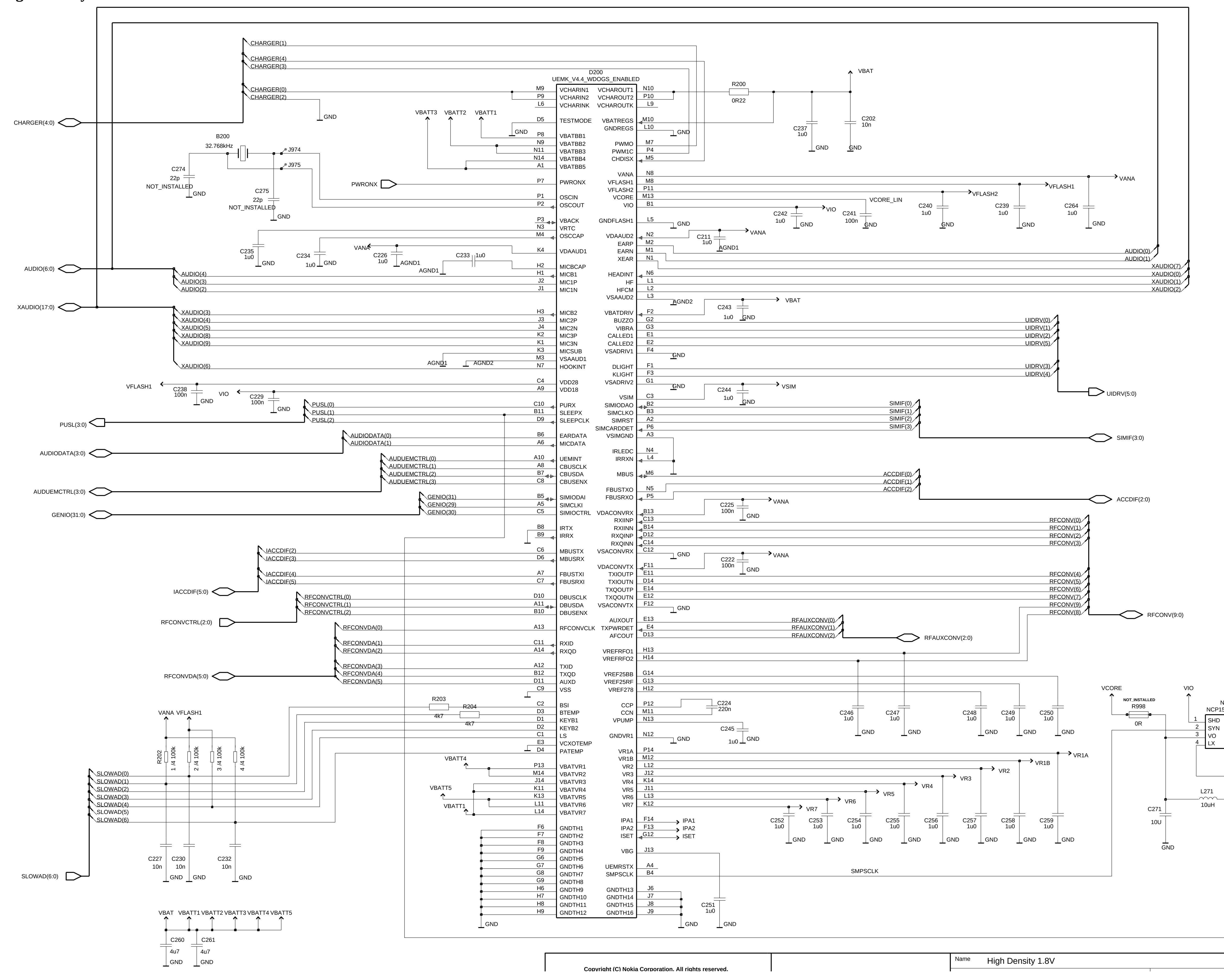
System Module



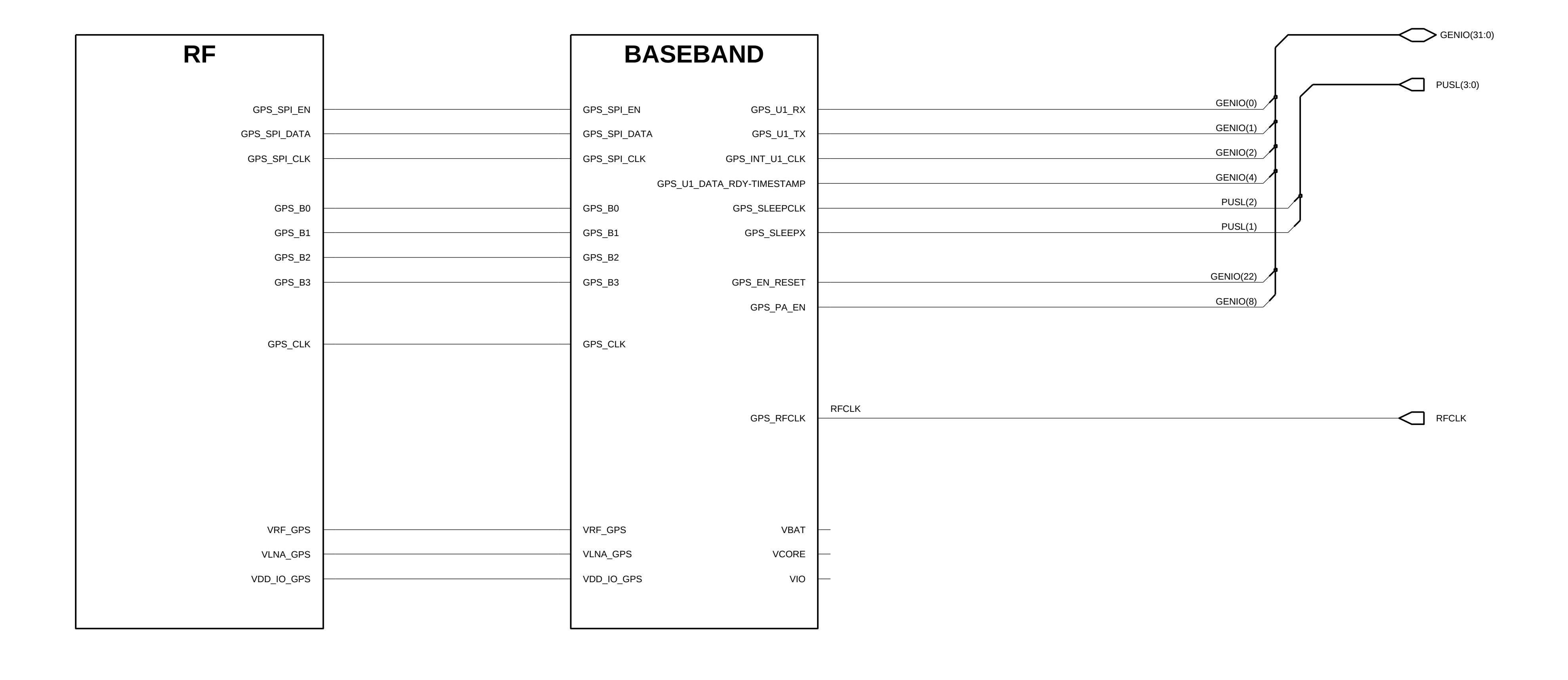
User Interface



High-Density 1.8V



GPS RF-BB Interface



GPS Baseband Circuit Diagram

VCORE VDD_CORE_GPS
R057 0R
VIO VDD_IO_GPS
R053 0R

GND VSS PINS=
R073 0R
R074 0R

C11 DATA15, D10 DATA14, E10 DATA13, G10 DATA12, H11 DATA11, H10 DATA10, J10 DATA9, K11 DATA8, L11 DATA7, L10 DATA6, K9 DATA5, L8 DATA4, K7 DATA3, K6 DATA2, L6 DATA1, L5 DATA0
A12 ADDR21, C10 ADDR20, B9 ADDR19, C9 ADDR18, C7 ADDR17, C6 ADDR16, C5 ADDR15, B4 ADDR14, B2 ADDR13, C3 ADDR12, D3 ADDR11, D2 ADDR10, E3 ADDR9, E2 ADDR8, F3 ADDR7, G2 ADDR6, J3 ADDR5, K3 ADDR4, L2 ADDR3, L3 ADDR2, K4 ADDR1
M1 EXINTR_N, M12 PG_PULSE_N, A1 FRAMESTART
G1 TIMESTAMP/IO9, A5 PA_EN/IO8
A10 SPARE3/IO7, K2 SPARE2/IO6, H12 SPARE1/IO5
J12 RF_LNA_EN/IO3, M10 SPI_EN/IO2, M9 SPI_DATA/IO§1, M8 SPI_CLK/IO0
K12 RF_REG_EN
B12 OEN, B1 WEN
M11 FLASH_CEN, L1 RAM_LBN, M2 RAM_UBN, A2 RAM_CEN, L12 RSVD_CEN

VSSa H3
VDDa H2
VDDram J11, VDDram L7, VDDram B7
VDDcore D11, VDDcore J2, VDDcore B3, VDDcore K10
VDDio F2, VDDio L4, VDDio B5, VDDio L9, VDDio G11
SIGNAL_I3 M7, SIGNAL_I2 M6, SIGNAL_I1 M5, SIGNAL_I0 M4
INT_BOOT_N C2
AI2_IS801_N B10
I2C_SDA B8 GPS_I2C_DATA J051
I2C_SCL A9 GPS_I2C_CLOCK J052
U2TX A7 GPS_U2TX J066
U2RX A6 GPS_U2RX J067
J068
INT_U1CLK/IO4 F1
U1DATA_RDY C1
U1TX E1
U1RX D1
SLAVE_MODE B11
CHIPSEL_IN_N A11
TEST_MODE G12
EXTERN0 A8
NIRQ D12
DBGEN B6
TDO F12, TDI E11, TMS E12, TCK F11, NTRST C12
SLEEPX_N A3
GPS_EN_RESET K1
REF_CLK H1
BYPASS J1
RTC_CLK A4
GPS_CLK M3
TWL5001_V1.2
D051

VDD_IO_GPS
C051 100n, C052 100n, C054 100n
VDD_CORE_GPS
C056 100n, C057 100n, C058 100n, C060 100n

VDD_IO_GPS
R052 100k

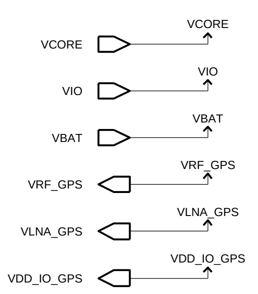
VDD_IO_GPS
R059 NOT_INSTALLED
R054 0R
R060 0R

VLNA_GPS
VRF_GPS
VBAT_GPS VBAT
R051 0R NOT_INSTALLED
VOUT VIN N052 VEN BYPASS
LP3985ITLX -2.8
GND
C064 2u2
C065 10n
C063 2u2

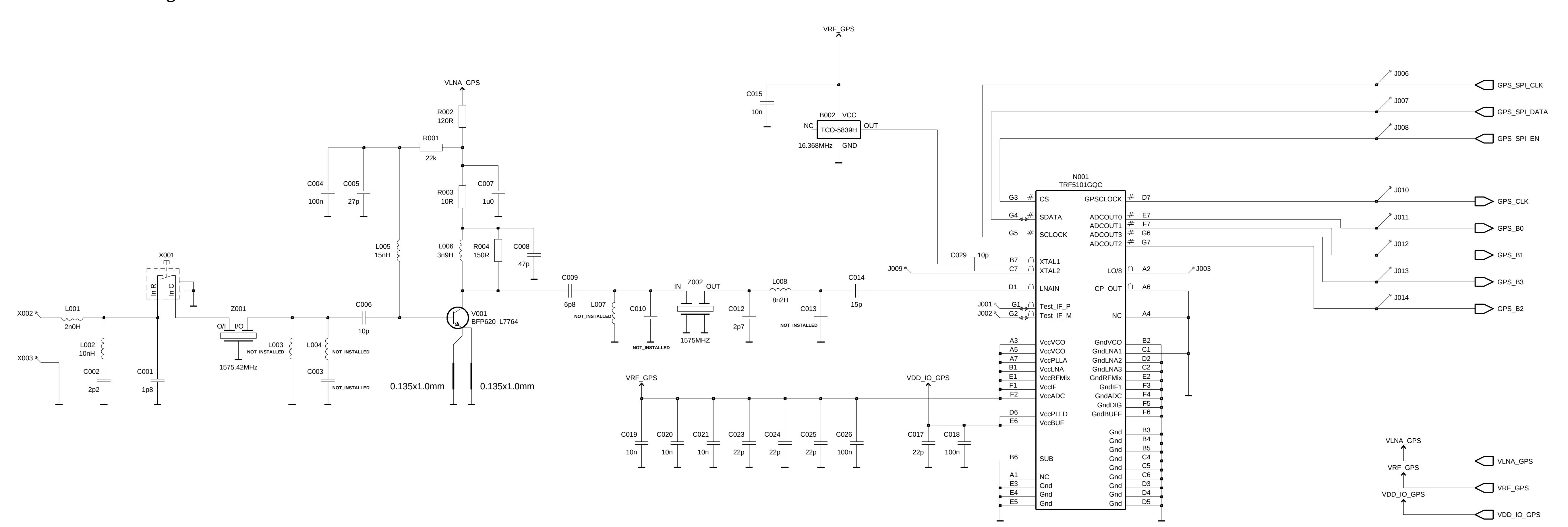
GPS_B3
GPS_B2
GPS_B1
GPS_B0
GPS_PA_EN
GPS_SLEEPCLK
C068 10n
GPS_RFCLK
GPS_EN_RESET
GPS_SLEEPX
GPS_U1_DATA_RDY-TIMESTAMP
GPS_U1_RX
GPS_U1_TX
GPS_INT_U1_CLK

GPS_INT_U1_CLK J055
GPS_U1_TX J057
GPS_U1_RX J058
GPS_U1_DATA_RDY-TIMESTAMP J056
GPS_EN_RESET J061
GPS_RFCLK' J062
GPS_PA_EN J064

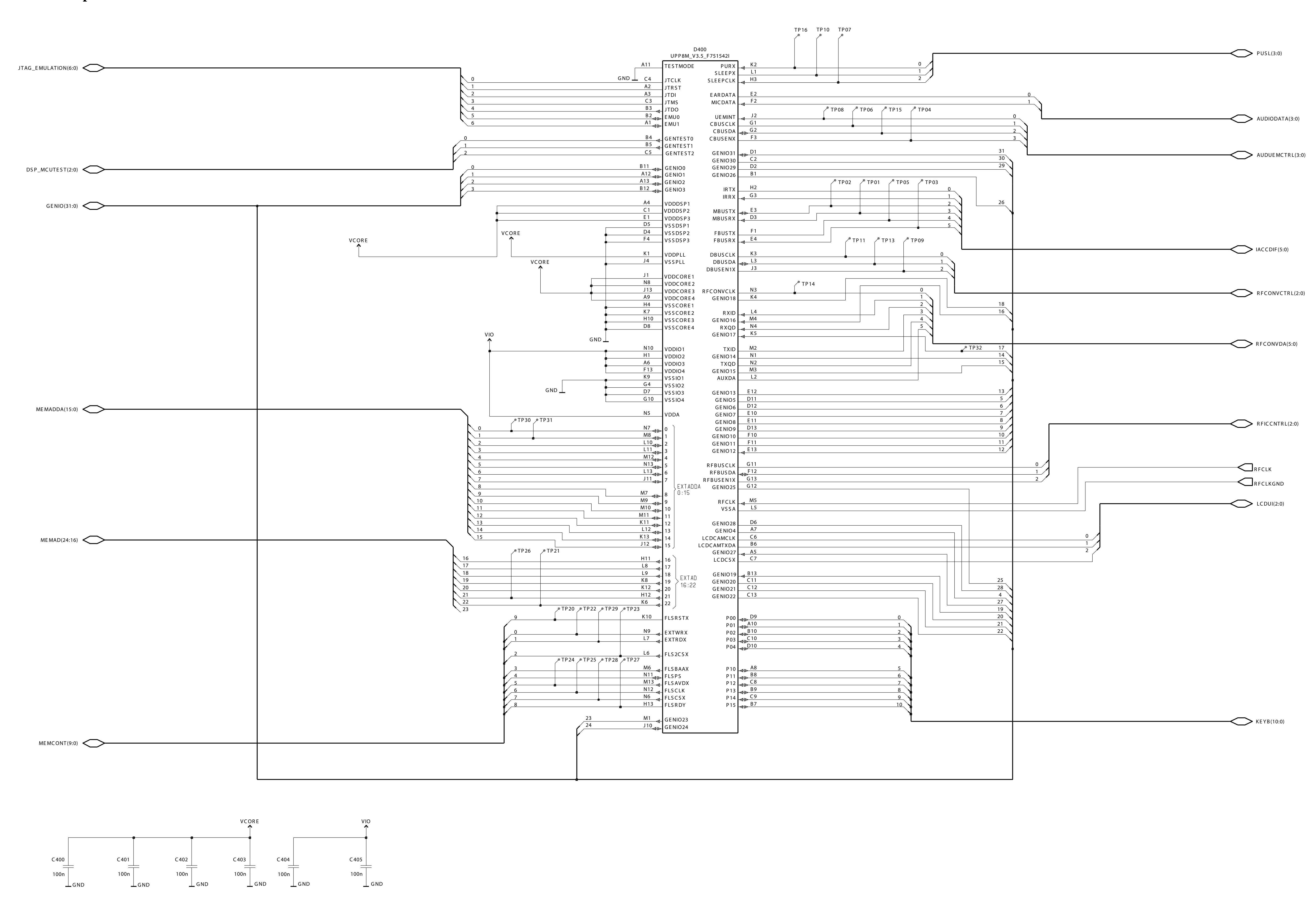
GPS_CLK
GPS_SPI_CLK
GPS_SPI_DATA
GPS_SPI_EN



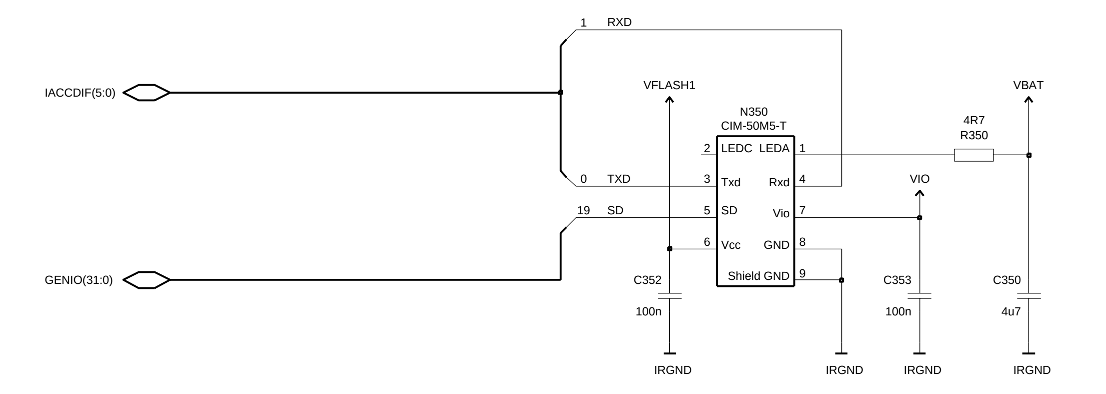
GPS RF Circuit Diagram



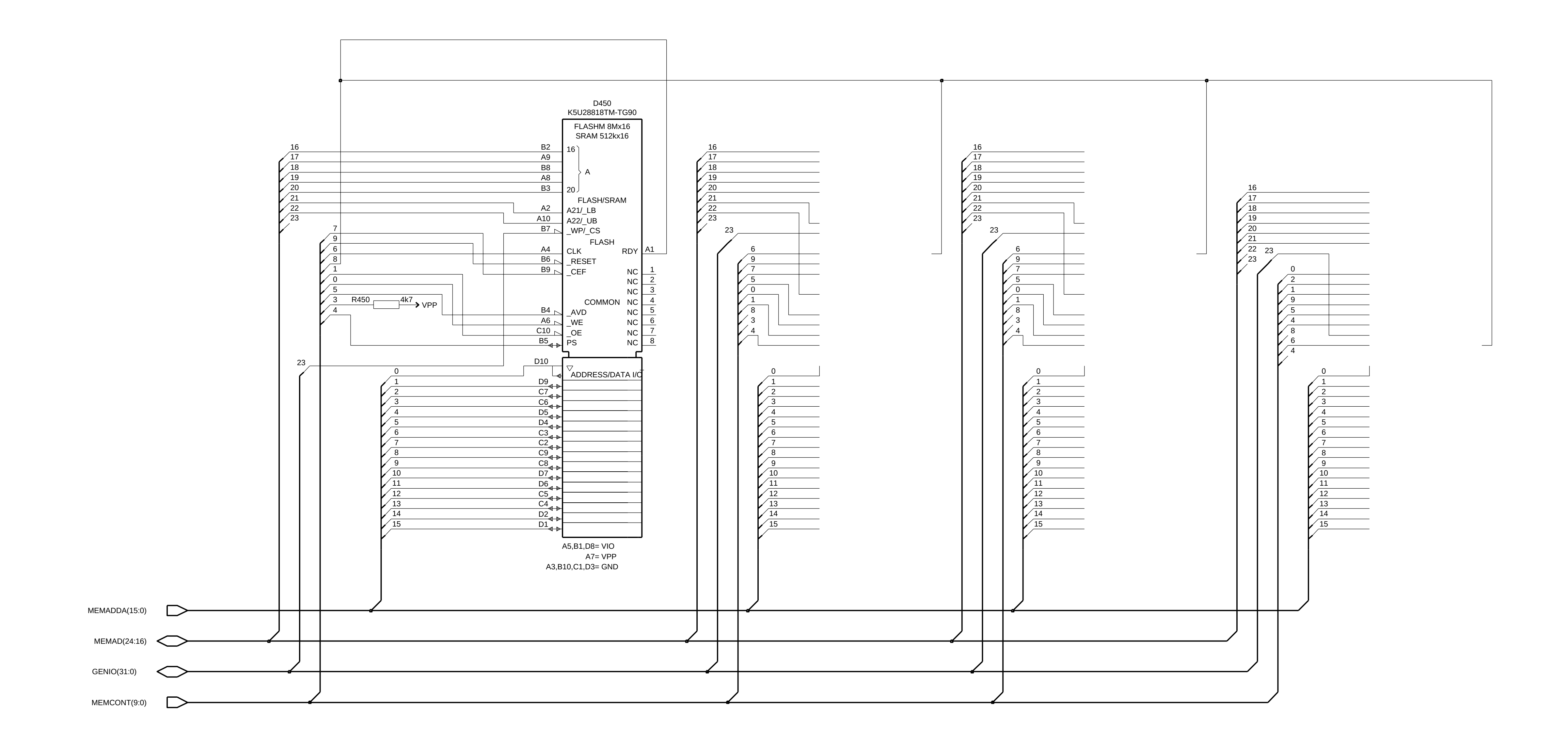
UPP 8M Implementation



IR Module 1.8V



AMD 64-Mbit (Burst Read/Write)

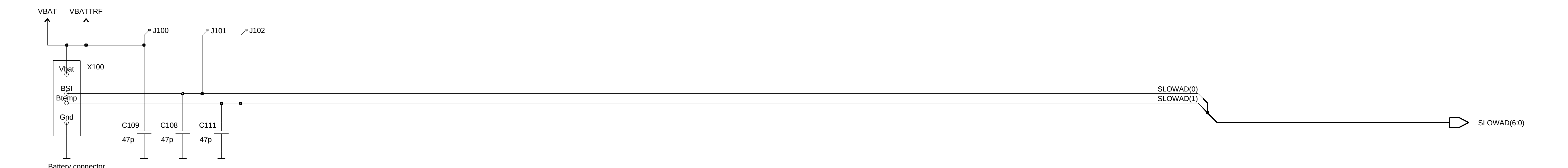


VPP VIO VIO

C454 C450 C451

10n 10n 100n

System Connector



Tomahawk
Charger connector
X102
+ 1
2
GND
NOT_INSTALLED
VCHAR_IN
GND
F100
1.5A
L100
42R/100MHz
V100
1PMT16AT3
C106
1n0
C110
22p
CHARGER(0)
CHARGER(2)
CHARGER(4:0)

TOMAHAWK
BOTTOM CONNECTOR

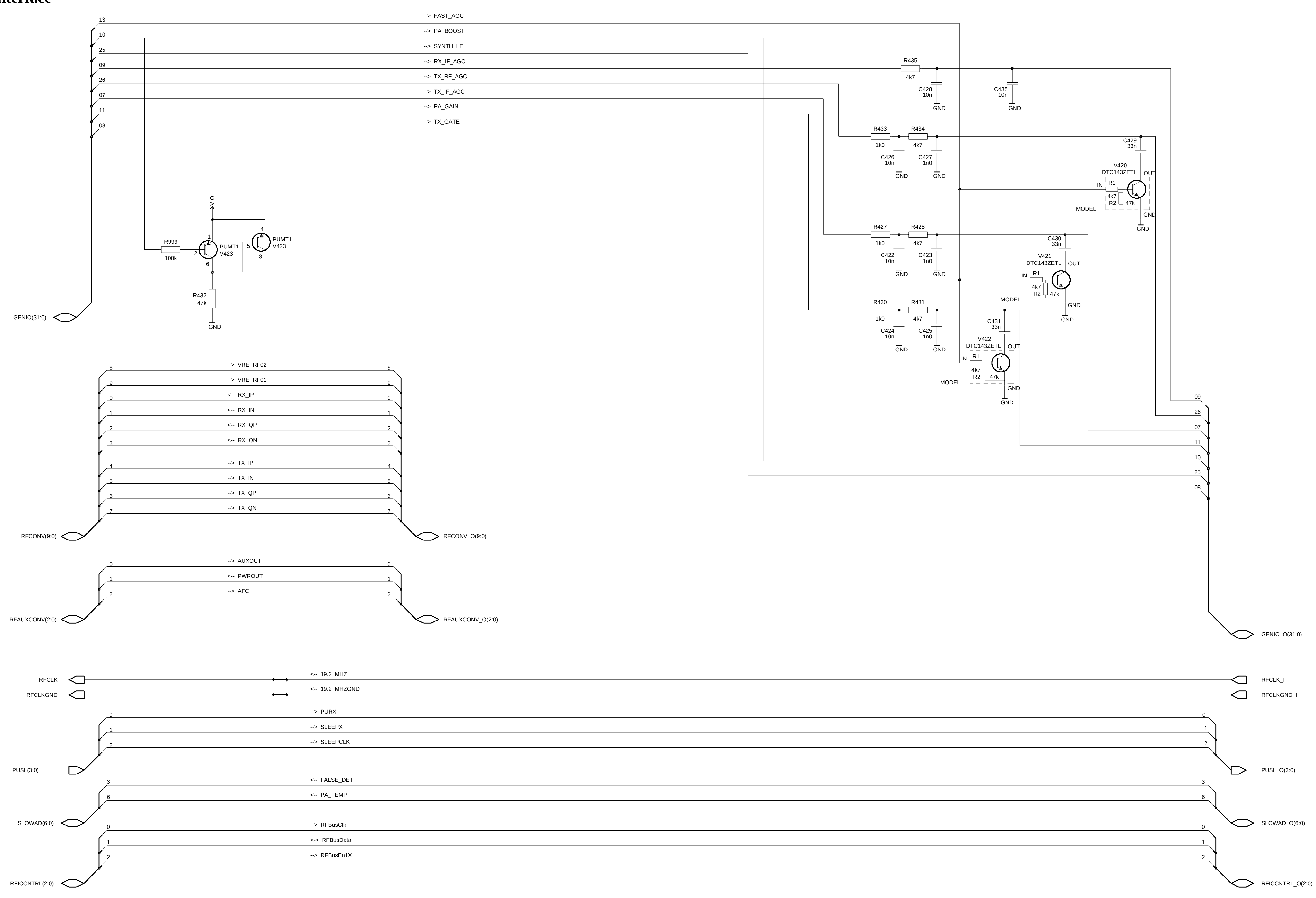
C101 1u0
VBAT
VIN N100
VOUT
LP3985ITLX
-2.8
GND
VEN
BYPASS
C102
1u0
C107
10n
R110
100k
GENIO(17)
GENIO(31:0)

Tomahawk
System connector
X101
1 2 3 4 5 6 7 8 9 10 11 12 13 14
GND
AGND
GND
ACI_IN
VOUT_IN
FBUSRX_IN
FBUSTX_IN
L106
600R/100MHz
L107
600R/100MHz
IP4043CX5
V101
GND
VFLASH1
R103
100k
R102
2 /2 47R
R102
1 /2 47R
HEADINT
R100
2 /2 47R
R100
1 /2 47R
R101
2 /2 47R
R101
1 /2 47R
C105
22p
C104
22p
R104
220k
C103
22p
ACCDIF(2)
ACCDIF(1)
ACCDIF(2:0)

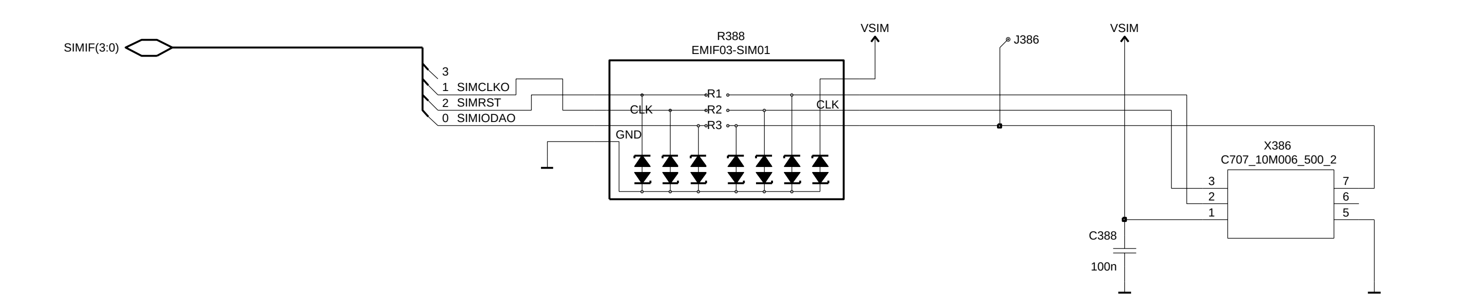
L102
MCZ1210AD102T
XMICP_IN
XMICN_IN
XMIC(1)
XMIC(0)
XMIC(2:0)

L103
MCZ1210AD102T
HSEAR_P_IN
HSEAR_N_IN
XEAR(1)
XEAR(0)
L104
MCZ1210AD102T
HSEAR_R_P_IN
HSEAR_R_N_IN
XEAR(2)
XEAR(3)
R112
R112
R113
R113
?? /2 VWM16V
?? /2 VWM16V
XEAR(3:0)
C112
10p
C113
10p
C114
10p
C115
10p
FMANT

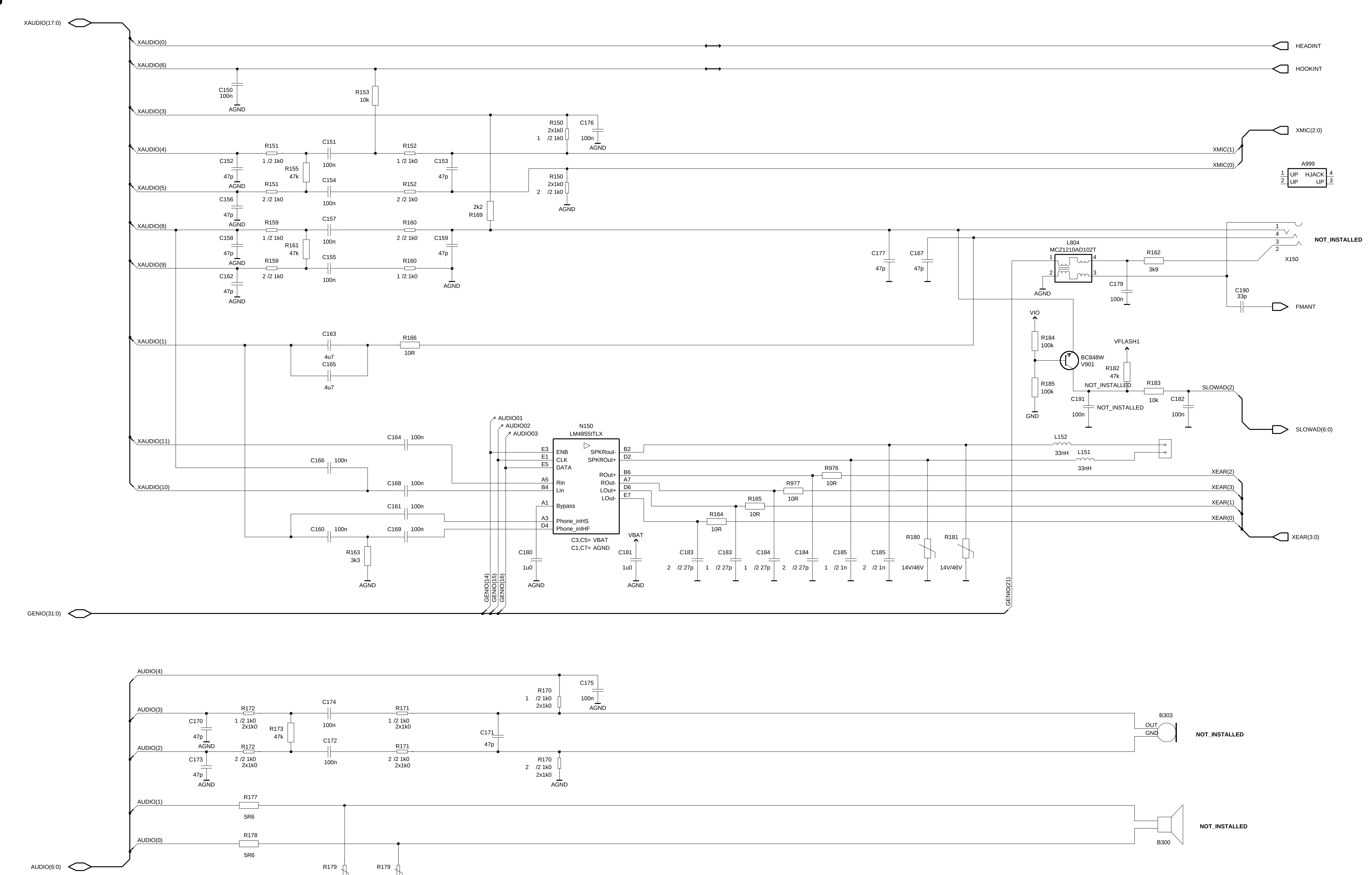
BB-RF Interface



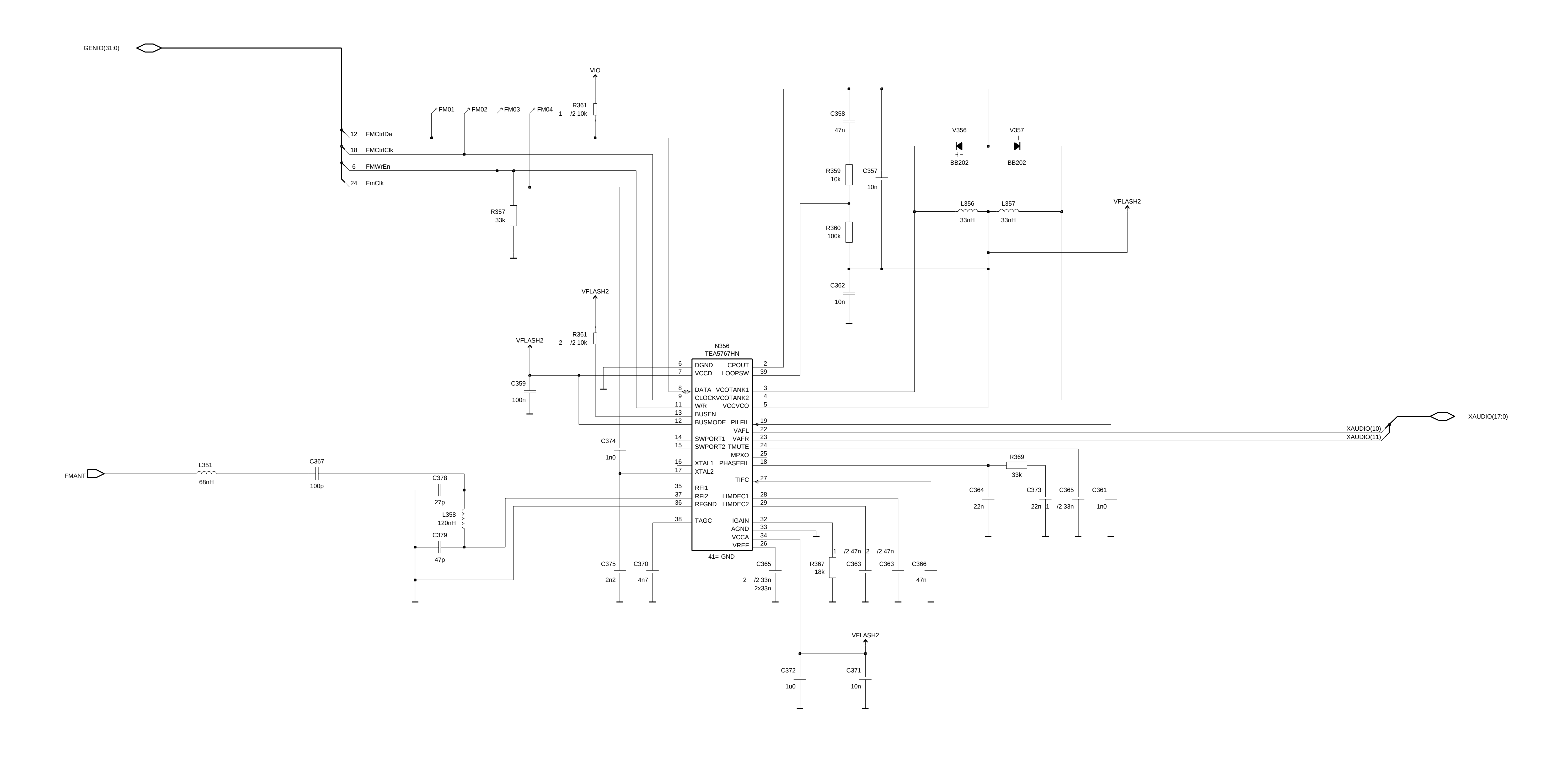
SIM Reader


SIMIF(3:0)
3
1 SIMCLKO
2 SIMRST
0 SIMIODAO
R388
EMIF03-SIM01
CLK
R1
R2
R3
CLK
GND
VSIM
J386
VSIM
X386
C707_10M006_500_2
3
2
1
7
6
5
C388
100n

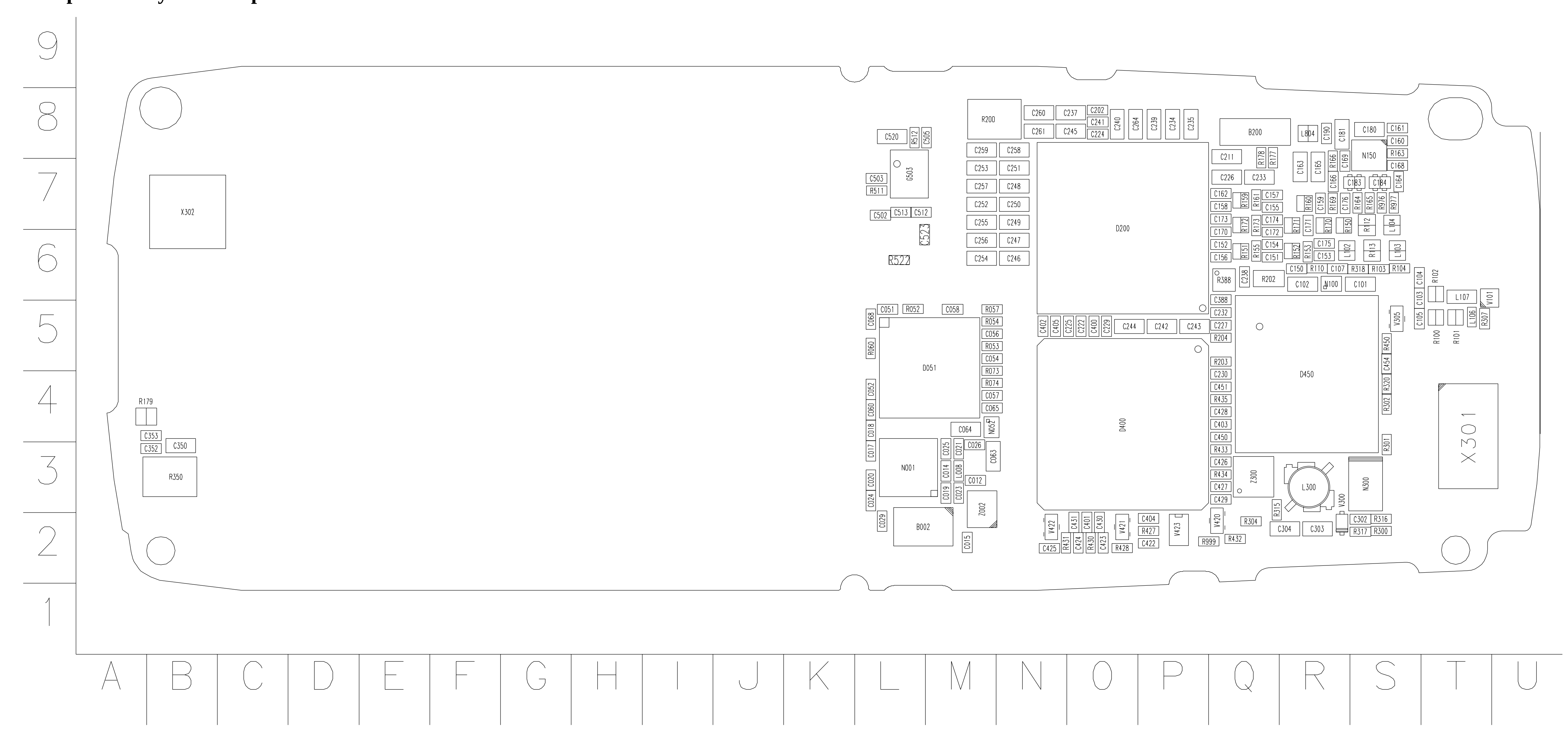
Audio



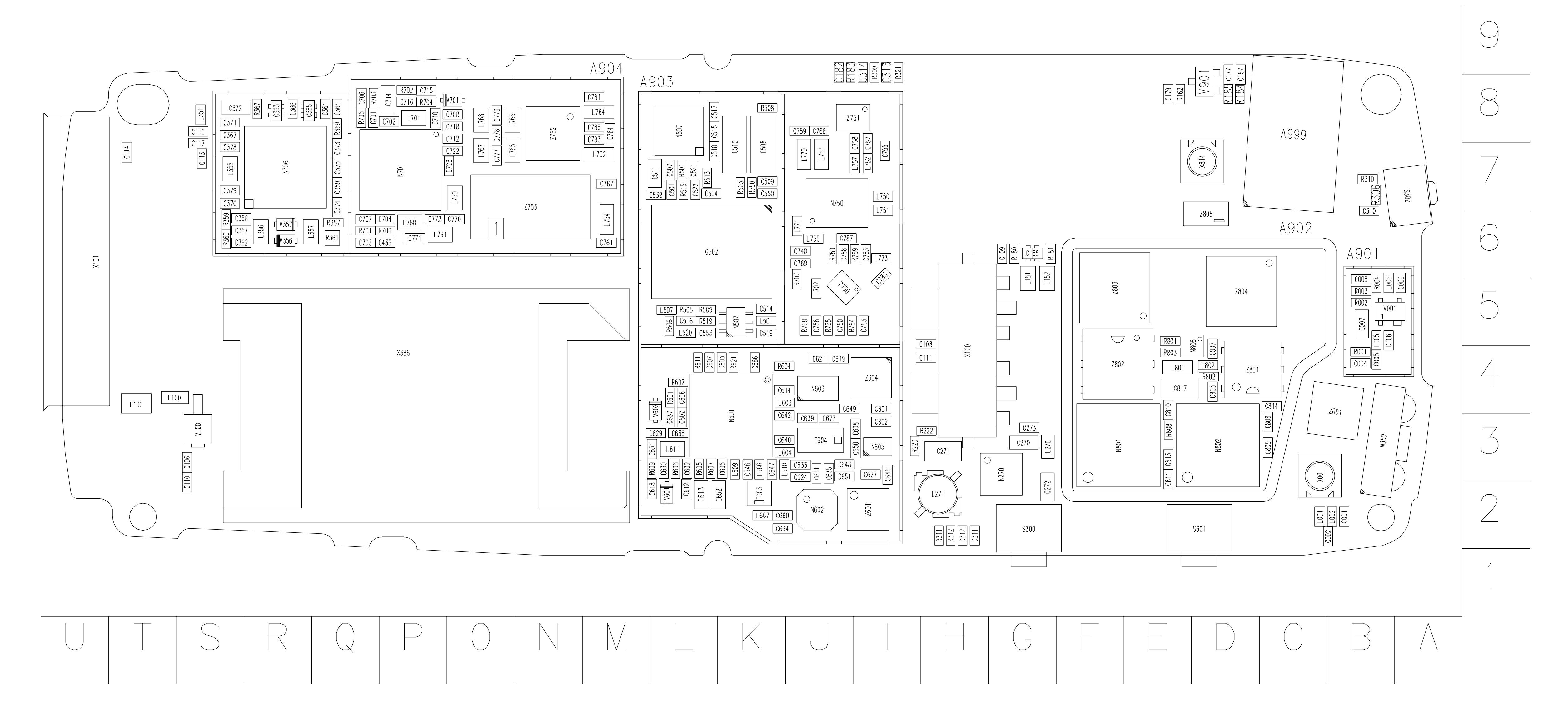
TEA5767 FM Radio Unit



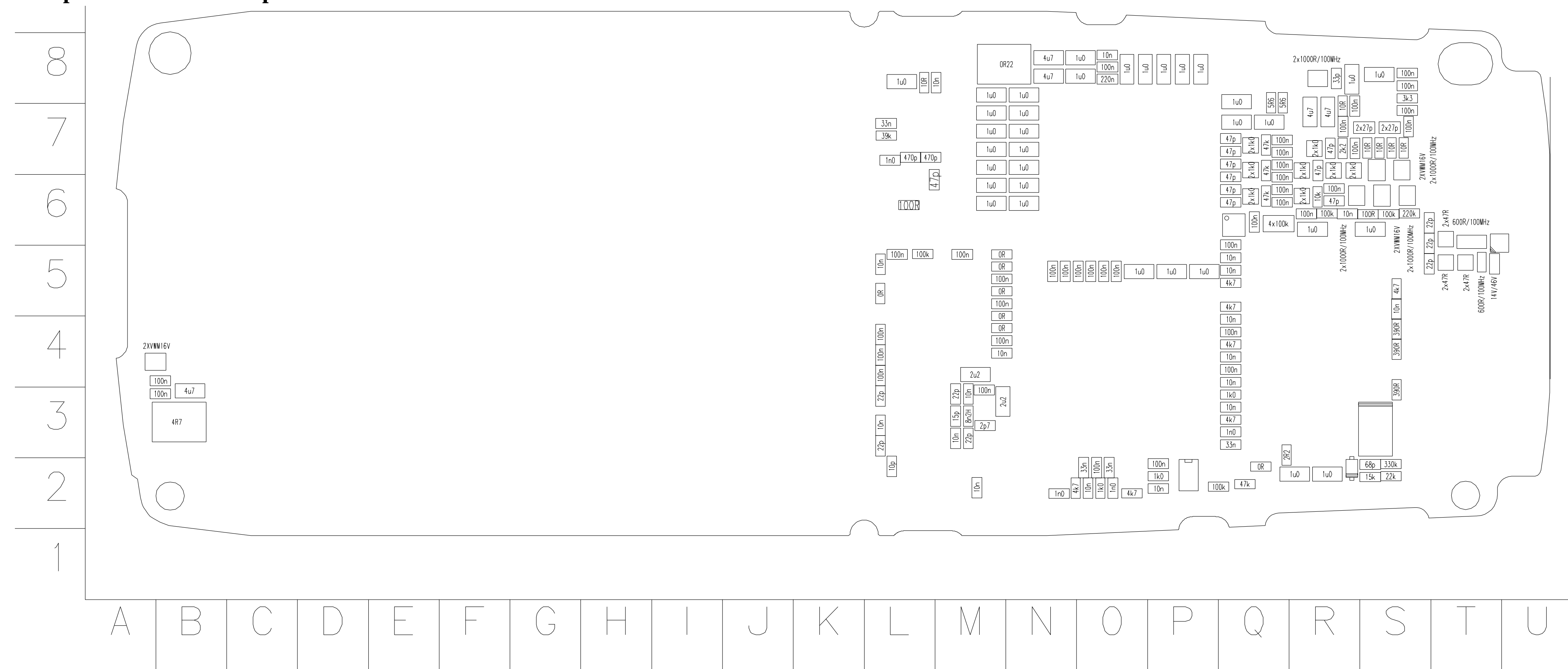
Component Layout — Top View



Component Layout — Bottom View



Component Values — Top



Component Values — Bottom

